



## PATIENT EDUCATION HANDOUTS

### High Cholesterol

#### Overview



#### What is high cholesterol?

Cholesterol is a type of fat called a [lipid](#). The body uses it for many things, such as making new cells. Your liver makes the cholesterol that your body needs. You also get cholesterol from the foods you eat.

Your body needs some cholesterol. But if you have too much, it starts to build up in your arteries. (Arteries are the blood vessels that carry blood away from the heart.) This is called hardening of the arteries, or [atherosclerosis](#) 📷. It is usually a slow process that gets worse as you get older.

To understand what happens, think about how a clog forms in the pipe under a kitchen sink. Like the buildup of grease in the pipe, the buildup of cholesterol narrows your arteries and makes it harder for blood to flow through them. It reduces the amount of blood that gets to your body tissues, including your heart. This can lead to serious problems, including [heart attack](#) and [stroke](#).

To find out how you are doing, compare your total cholesterol number to the following:

- **Best** is less than 200.
- **Borderline-high** is 200 to 239. Even borderline-high cholesterol makes you more likely to have a heart attack.
- **High** is 240 or above.

#### What are the symptoms?

High cholesterol doesn't make you feel sick. But if cholesterol builds up in your arteries, it can block blood flow to your heart or brain and cause a heart attack or stroke.

By the time you find out you have it, it may already be clogging your arteries. So it is very important to start treatment even though you may feel fine.

#### What are the different kinds of cholesterol?

Cholesterol travels through the blood attached to a protein. This package of cholesterol (a lipid) and protein is called a lipoprotein. Lipoproteins are either high-density or low-density, based on how much protein and fat they have.

- [Low-density lipoproteins \(LDL\)](#) are the “bad” cholesterol. LDL is mostly fat with only a small amount of protein. It can clog your arteries. If you have high cholesterol, your doctor will want you to lower your LDL.
- [High-density lipoproteins \(HDL\)](#) are the “good” cholesterol. HDL is more protein than fat. It helps clear the bad cholesterol from your blood so it does not clog your arteries. A high level of HDL can protect you from a heart attack.
- [Triglycerides](#) are another type of fat in the blood that can affect your health. If you have high triglycerides and high LDL, your chances of having a heart attack are higher.

It may help to think of HDL as the “Healthy” cholesterol and LDL as the “Lousy” cholesterol. Or you could remember that HDL should be High and LDL should be Low.

Experts have come up with the best level for each type of cholesterol. Compare your numbers to these targets:

- **LDL** should be less than 100. LDL increases your risk of heart problems, so the lower your LDL, the better. A level of 160 or above is high.
- **HDL** should be more than 40. HDL over 60 helps protect against a heart attack. HDL below 40 increases your risk of heart problems. The higher your HDL, the better. A high HDL number can help offset a high LDL number.
- **Triglycerides** should be less than 150. A level above 150 may increase your risk for heart problems.

## What causes high cholesterol?

Many things can cause high cholesterol, including:

- Diet. Eating too much saturated fat and cholesterol can raise your cholesterol. Saturated fat and cholesterol are in foods that come from animals (such as beef, pork, veal, milk, eggs, butter, and cheese), many packaged foods, stick margarine, vegetable shortening, and snack foods like cookies, crackers, and chips.
- Weight. Being overweight may raise triglycerides and lower “good” HDL.
- Activity level. Not exercising may raise “bad” LDL and lower HDL.
- Overall health. Diseases such as [hypothyroidism](#) can raise cholesterol. Smoking may lower HDL.
- Age. Cholesterol starts to rise after age 20. In men, it usually levels off after age 50. In women, it stays fairly low until [menopause](#). After that, cholesterol levels rise to about the same levels as in men.
- Family. Some people inherit a rare disease called a [lipid disorder](#). It can cause very high total cholesterol, very low HDL, and high triglycerides. If you have this problem, you will need to start treatment at a young age.

## How is high cholesterol diagnosed?

Doctors use a blood test to check cholesterol.

- A fasting cholesterol test (also called a lipoprotein analysis) is the most complete test. It measures total cholesterol, HDL, LDL, and triglycerides. You cannot have food for 9 to 12 hours before this test.
- A simple cholesterol test can measure total cholesterol and HDL. You can eat before this test. Sometimes doctors do this test first. If it shows you have high cholesterol or low HDL, then you will get a fasting cholesterol test.


## How is it treated?

The two main treatments are lifestyle changes and medicines. The goal of treatment is to lower your "bad" LDL cholesterol and reduce your risk of a heart attack. You may also need to raise your "good" HDL cholesterol. A high level of HDL helps reduce your risk of heart problems.

Some lifestyle changes are important for everyone with high cholesterol. Your doctor will probably want you to:

- Follow the [Therapeutic Lifestyle Changes \(TLC\) diet](#). The goal is to reduce the amount of saturated fat you eat. Eating saturated fat raises your cholesterol. The TLC diet helps you learn to make better food choices by picking lean meats, low-fat or nonfat products, and good fats like olive and canola oils.
- Lose weight, if you need to. Losing just 5 to 10 pounds (2.3 to 4.5 kilograms) can lower your cholesterol and triglycerides. Losing weight can also help lower your blood pressure.
- Be more active. Exercise can raise your "good" HDL and may help you control your weight.
- Quit smoking, if you smoke. Quitting can help raise your HDL and improve your heart health.


Sometimes lifestyle changes are enough on their own. But if you try them for a few months and they don't lower your cholesterol enough, your doctor may prescribe a cholesterol-lowering medicine called a [statin](#). You also may need medicines to lower triglycerides or raise HDL.

You may need to start taking medicine right away if your cholesterol is very high or if you have another problem that increases your chance of having a heart attack. People who have a high risk for heart attack benefit from taking higher doses of statins to lower their LDL cholesterol as much as possible. The more these people can lower their LDL, the less likely they are to have a heart attack.<sup>1</sup> To find out your risk, use this [Interactive Tool: Are You at Risk for a Heart Attack?](#) 

It is important to take your medicine just the way your doctor tells you to. If you stop taking your medicine, your cholesterol will go back up.

You will need to have your cholesterol checked regularly. Your results can help your doctor know if lifestyle changes have helped or if you need more or different medicines.

### More information

- [What do lipoproteins do?](#)
- [What happens if I develop atherosclerosis?](#)
- [What are the stages of atherosclerosis?](#)
- [What is my risk of having a heart attack?](#) 

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